



US 20210265777A1

(19) **United States**(12) **Patent Application Publication**  
**Di Paola et al.**(10) **Pub. No.: US 2021/0265777 A1**(43) **Pub. Date: Aug. 26, 2021**(54) **BLOOD PUMP CONNECTORS**(71) Applicant: **TC1 LLC**, St. Paul, MN (US)(72) Inventors: **John Mark Di Paola**, Livermore, CA (US); **Michael McCoy**, St. Paul, MN (US); **John Duc Nguyen**, San Ramon, CA (US); **Jaime Romero**, San Leandro, CA (US); **Dustin Roelle**, Mountain House, CA (US); **Andrew Wong**, St. Paul, MN (US); **Dmitry Protsenko**, St. Paul, MN (US); **Michael Sahines**, St. Paul, MN (US)(73) Assignee: **TC1 LLC**, St. Paul, MN (US)(21) Appl. No.: **17/319,782**(22) Filed: **May 13, 2021****Related U.S. Application Data**

(63) Continuation of application No. 16/395,134, filed on Apr. 25, 2019, now Pat. No. 11,031,729.

(60) Provisional application No. 62/664,679, filed on Apr. 30, 2018, provisional application No. 62/736,267, filed on Sep. 25, 2018, provisional application No. 62/783,606, filed on Dec. 21, 2018.

**Publication Classification**(51) **Int. Cl.****H01R 13/629** (2006.01)**F04B 17/03** (2006.01)**F04B 19/04** (2006.01)**H01R 13/52** (2006.01)**H01R 13/627** (2006.01)**H01R 24/28** (2006.01)**H01R 24/86** (2006.01)**H01R 25/00** (2006.01)**H01R 43/26** (2006.01)**A61M 60/50** (2006.01)**A61M 60/871** (2006.01)(52) **U.S. Cl.****CPC ... H01R 13/62927** (2013.01); **H01R 2103/00** (2013.01); **F04B 19/04** (2013.01); **H01R 13/5219** (2013.01); **H01R 13/5224** (2013.01); **H01R 13/5227** (2013.01); **H01R 13/6273** (2013.01); **H01R 24/28** (2013.01); **H01R 24/86** (2013.01); **H01R 25/006** (2013.01); **H01R 43/26** (2013.01); **A61M 60/50** (2021.01); **A61M 60/871** (2021.01); **F04B 2203/00** (2013.01); **F04B 17/03** (2013.01)

(57)

**ABSTRACT**

An implantable blood pump system is disclosed herein. The implantable blood pump system includes an implantable blood pump, a controller coupled to the blood pump, a connector receptacle, and a connector insert. The connector receptacle can include a plurality of contacts, and a following surface. The connector insert can be received within the connector receptacle to couple a plurality of insert contacts with the plurality of contacts of the connector receptacle. The connector insert can include walls defining a follower receptacle that can receive a portion of the following surface when the connector insert is in a desired alignment with respect to the connector receptacle, and a cam surface that can engage with the following surface to bias the connector insert to the desired alignment with respect to the connector receptacle when the connector insert is inserted into the connector receptacle.

